

ABSTRACT

A method of making an embossed optical sheet material includes: providing an optically anisotropic, uniaxially oriented polymer substrate having a first major surface and a second major surface; heating a patterned tool using radiant energy from a radiant energy source, wherein the pattern comprises a plurality of parallel raised microstructures having a longitudinal direction; pressing the tool against the first major surface of the polymer substrate such that the longitudinal direction of the raised microstructures is substantially parallel to the direction of orientation of the polymer substrate, to soften the first major surface of the polymer substrate and emboss groove-shaped microchannels into the polymer substrate; cooling the embossed polymer substrate; and separating the tool from the polymer substrate; wherein the orientation of the polymer substrate is unchanged throughout the polymer substrate and first major surface.